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Quality Engineering Test Report

SERIES: T-40 **40W AC-DC TRIPLE OUTPUT SWITCHING POWER SUPPLY**

SAMPLE:	**A.T-40A**	**V1: 5V / 3A**	**B.T-40B**	**V1: 5V/ 3A**	**C.T-40C**	**V1: 5V/ 3A**
		V2: 12V / 2A		**V2: 12V/ 2A**		**V2: 15V/ 1.5A**
		V3: -5V / 0.5A		**V3: -12V/ 0.5A**		**V3: -15V/ 0.5A**

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT
1	AC INPUT VOLTAGE RANGE	I/P:TESTING SPEC:85~264VAC O/P:FULL LOAD	A:65VAC~267VAC	P
2	LINE REGULATION	I/P:85~264VAC SPEC: A: V1 :±0.5% V2 :±1% V3 :±1% O/P:FULL LOAD B: V1 :±0.5% V2 :±1% V3 :±1% C: V1 :±0.5% V2 :±1% V3 :±1%	A: V1: 0.00% ~ 0.00% V2: -0.05% ~ +0.61% V3: 0.00% ~ +0.48% B: V1: 0.00% ~ 0.00% V2: 0.00% ~ +0.46% V3: +0.10% ~ +0.42% C: V1: 0.00% ~ 0.00% V2: 0.00% ~ +0.90% V3: -0.08% ~ -0.70%	P
3	LOAD REGULATION	I/P:230VAC SPEC: A: V1 :±0.5% V2 :±4% V3 :±6% O/P:MIN. TO FULL LOAD B: V1 :±0.5% V2 :±4% V3 :±6% C: V1 :±0.5% V2 :±4% V3 :±4%	A: V1: 0.00% ~ +0.12% V2: +0.03% ~ +0.35% V3: -0.01% ~ +0.83% B: V1: -0.12% ~ 0.00% V2: +0.20% ~ +0.25% V3: -1.80% ~ +0.69% C: V1: -0.12% ~ 0.00% V2: -0.23% ~ +0.32% V3: -1.58% ~ +0.75%	P
4	OUTPUT VOLTAGE TOLERANCE	I/P:85~264VAC SPEC: A: V1 :±2% V2 :±6% V3 :±8% O/P:MIN. TO FULL LOAD B: V1 :±2% V2 :±6% V3 :±8% C: V1 :±2% V2 :±6% V3 :±6%	A: V1: -0.12% ~ +0.24% V2: -2.34% ~ +4.85% V3: -5.76% ~ +6.74% B: V1: -0.12% ~ +0.12% V2: -2.55% ~ +4.64% V3: -3.33% ~ +7.8% C: V1: -0.14% ~ 0.00% V2: -1.83% ~ +4.87% V3: -2.46% ~ +5.00%	P
5	RIPPLE&NOISE	I/P:230VAC SPEC: A: V1 :100mV V2 :120mV V3 :100mV O/P:FULL LOAD B: V1 :100mV V2 :120mV V3 :120mV C: V1 :100mV V2 :120mV V3 :120mV	A: V1: 12mV V2: 15mV V3: 9mV B: V1: 10mV V2: 12mV V3: 13mV C: V1: 9mV V2: 12mV V3: 12mV	P
6	AC INPUT CURRENT	I/P:115VAC SPEC:1.2A O/P:FULL LOAD	A:0.86A	P
7	MAX. INRUSH CURREN	I/P:230VAC SPEC:40A O/P: FULL LOAD	A:26A	P
8	O/P VOLTAGE ADJ.RANGE	I/P:230VAC SPEC: A: -5%~+10% O/P:MIN. LOAD B: -5%~+10% C: -5%~+10%	A: 4.52V~5.83V B: 4.57V~5.83V C: 4.47V~5.77V	P
9	SET UP TIME	I/P:230VAC SPEC:800mS O/P:FULL LOAD	A: 554mS	P
10	HOLD UP TIME	I/P:230VAC SPEC:60mS O/P:FULL LOAD	A: 81mS	P
11	EFFICIENCY	I/P:115VAC SPEC: A:72% O/P:FULL LOAD B:72% C:72%	A:72.614% B:73.38% C:73.83%	P

<table>
<tr><th>NO</th><th>TEST ITEM</th><th>TEST CONDITION / SPECIFICATION</th><th>RESULT</th><th>VERDICT</th></tr>
<tr><td>12</td><td>OVER LOAD
PROTECTION</td><td>I/P:115VAC SPEC:105%~150%
O/P:TESTING</td><td>A:129%
B:143%
C:142%</td><td>P</td></tr>
<tr><td>13</td><td>OVER VOLTAGE
PROTECTION</td><td>I/P:230VAC SPEC:5.75~6.75V
O/P:TESTING</td><td>A:6.19V
B:6.19V
C:6.19V</td><td>P</td></tr>
<tr><td>14</td><td>GROUND LEAKAGE
CURRENT</td><td>I/P:240VAC SPEC:
L-FG--<3.5mA
N-FG--<3.5mA</td><td>A: L-FG:0.73mA
N-FG:0.66mA</td><td>P</td></tr>
<tr><td>15</td><td>INSULATION
RESISTANCE</td><td>SPEC: O/P-FG 500VDC/100M Ohms MIN.
I/P-O/P 500VDC/100M Ohms MIN.
I/P-FG 500VDC/100M Ohms MIN.</td><td>A: O/P-FG >100M Ohms
I/P-O/P >100M Ohms
I/P-FG >100M Ohms</td><td>P</td></tr>
<tr><td>16</td><td>DIELECTRIC /
WITHSTAND
VOLTAGE</td><td>SPEC: I/P- O/P: 3KVAC/ 1 min.(10mA CUT-OFF)
I/P - FG: 1.5KVAC/ 1 min.(10mA CUT-OFF)
O/P -FG: 0.5KVAC/ 1 min.(10mA CUT-OFF)</td><td>A: I/P-O/P :4.85mA
I/P-FG :4.87mA
O/P-FG :3.56mA</td><td>P</td></tr>
<tr><td rowspan="2">17</td><td rowspan="2">EMS TEST</td><td>EFT TEST:
EN50082-1 IEC1000-4-4</td><td>A: CRITERIA A OK</td><td>P</td></tr>
<tr><td>SURGE TEST:
EN50082-1 IEC1000-4-5</td><td>A: CRITERIA A OK</td><td>P</td></tr>
<tr><td>18</td><td>BURN-IN TEST</td><td>I/P: 230VAC O/P: FULL LOAD
TA: 24°C BURN-IN DURATION : 3.5 hrs</td><td>A:NON BREAK</td><td>P</td></tr>
<tr><td>19</td><td>ENVIRONMENT TEST
(SAMPLE C:)</td><td>HIGH AMBIENT TEMPERATURE FULL LOAD TEST
I/P:230VAC O/P:FULL LOAD
AMBIENT TEMPERATURE:44.3°C</td><td>A:AFTER 2.67 hrs
NON BREAK</td><td>P</td></tr>
<tr><td>20</td><td>TEMPERATURE RISE
TEST T rise OF PARTS</td><td>A: I/P :230VAC AFTER 3.5 hr BURN-IN
O/P :FULL LOAD TA:24°C
<table>
<tr><th>POSITION</th><th>P/N</th><th>TEMP</th><th>T rise</th></tr>
<tr><td>BD1</td><td>BRIDGE DIODE</td><td>64.3°C</td><td>40.3°C</td></tr>
<tr><td>Q1</td><td>MAIN TRANSISTOR</td><td>67°C</td><td>43°C</td></tr>
<tr><td>T1</td><td>MAIN TRANSFORMER WIRE</td><td>75.9°C</td><td>51.9°C</td></tr>
<tr><td>D4</td><td>O/P DIODE</td><td>69.6°C</td><td>45.6°C</td></tr>
<tr><td>C21</td><td>O/P FILTER CAPACITOR</td><td>76.6°C</td><td>52.6°C</td></tr>
<tr><td>C5</td><td>I/P FILTER CAPACITOR</td><td>57.7°C</td><td>33.7°C</td></tr>
</table></td><td></td><td>P</td></tr>
<tr><td>21</td><td>LIFE CYCLE</td><td>A: SUPPOSE C21 IS THE MOST CRITICAL COMPONENT
I/P:230VAC O/P:FULL LOAD Ta:25°C Tc21:77.6°C Life: 34223 hrs
I/P:230VAC O/P:FULL LOAD Ta:45°C Tc21:89.8°C Life: 14691 hrs</td><td></td><td>P</td></tr>
<tr><td>22</td><td>CRITICAL COMPONENT
RECORD
(FOR QC INSPECTION
REFERENCE ONLY)</td><td colspan="2">A: FUSE :3AL/250V
BRIDGE DIODE :D3BX60
LINE FILTER :TF411 ET-24
TRANSFOMER :TF144-R2 EER-28L
POWER SWITCHER :2SK727 TO-3P
OUTPUT DIODE :SF5LC20U TO-220F
OUTPUT CAPACITOR :ELNA 820uF/16V 105°C RJH
INPUT CAPACITOR :HITACHI 100uF/400V 105°C
P.C.B :T-40-R4 CEM-1 2 OZ SS</td><td></td></tr>
</table>

DATE	SAMPLE	NOTE	TEST	APPROVAL
19980529	T-40	PASS	H.C.LIOU	Max Lin
19990518	T-40	PASS	H.C.LIOU	Max Lin

PREVIOUS